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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,047	03/10/2004	Takemi Hasegawa	50212-575	2723

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McDermott, Will & Emery  
600 13th Street, N.W.  
Washington, DC 20005-3096

EXAMINER
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HOFFMANN, JOHN M

ART UNIT	PAPER NUMBER
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1791

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10/25/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/796,047	Applicant(s) HASEGAWA ET AL.	
	Examiner John Hoffmann	Art Unit 1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-21, 24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) 24 <sup>remains</sup> is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-21 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: There is no antecedent basis or clear support for the "holding condition" of claim 16, lines 8-9.

As pointed out in **MPEP 608.01(o)**:

Note that examiners should ensure that the terms and phrases used in claims presented late in prosecution of the application (including claims amended via an examiner's amendment) find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description, see 37 CFR 1.75(d)(1). If the examiner determines that the claims presented late in prosecution do not comply with 37 CFR 1.75(d)(1), applicant will be required to make appropriate amendment to the description to provide clear support or antecedent basis for the terms appearing in the claims provided no new matter is introduced.

As indicated above, examiner could not find any antecedent basis for the language and any support appears to be very unclear. Thus it is deemed that a prima facie showing has been made of lack of clear support or antecedent basis. The burden is now on applicant to demonstrate clear support or antecedent basis for the claim language.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 16-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

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which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Examiner could find no support for the newly claimed adjusting of a holding condition – either explicit or implicit. Further at page 9 of the response, applicant points to page 16, line 20 to page 17, line 20 as disclosing the subject matter of claim 16. Examiner could find no mention of a “holding condition” or its adjustment.

This is deemed to be a prima facie showing on failure to comply with the requirement. The burden is now on Applicant to show the requirement is complied with, or to amend the claims so that they comply.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12-13, 16-21 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 requires adjusting a holding condition. Examiner could find no discussion of this in the specification to see what this might mean. Moreover, “holding” suggests something is held constant – but the claim requires adjusting it. Thus the claim appears to require contradictory things: holding and adjusting. One would not

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be able to distinguish between adjusting a holding condition versus adjusting a non-holding condition, because the condition is apparently not doing any holding.

Claims 12, 13: there is no antecedent basis for "the measured values"

The last two lines require "the area fraction...are measured": it is unclear if this should be "is measured".

Claim 25: the term "selectively" is indefinite as to its meaning because it reads on a nebulous mental step conducted prior to the manipulative steps of the claimed process, hence rendering the present process claim unclear in meaning in scope. If applicant wishes to patent detail controls over the recited process, the process steps must be positively recited. See Seagram & Sons Inc. vs Marzall, 84 USPQ 180.

### ***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 11, 14 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fajardo WO 00/16141 alone or in view of Turpin 5167684 .

The invention is disclosed substantially at least at pages 7-8 of Fajardo. Page 1, lines 7-8 indicates the invention is for a fiber that varies in the axial direction, and page 2, lines 7- 22 disclose changing the pore volume and air fill fraction as a design variable. Fajardo does not explicitly disclose "obtaining an area fraction of the plurality of voids",

nor the claimed performing of feedback control. However, page 8, lines 11-12 discloses controlling pressure during the drawing.

Since Fajardo teaches to control pore volume and air filling fraction, it would have been obvious to measure, calculate, estimate, or otherwise “obtain” these values, so that one can control them. The disclosure of controlling these variables would immediately imply that one has to measure/obtain their values. The air filling fraction would be an area fraction of the voids. It is deemed that these are different terms for substantially the same ratio. However, even if they are completely different fractions, the present claims fail to define over Fajardo – merely because the broadest reasonable interpretation of “area fraction” appears to encompass any conceivable fraction. This may seem a bizarre finding, since Applicant has clearly and deliberately defined “area fraction” at page 16, lines 8-11 as “the ratio of the total area of the voids to the area of the cross section” which occurs “in the cross-section of a preform or a fiber”. It may seem bizarre that the Office finds that the term is much broader than applicant’s definition – because applicant has the right to be his own lexicographer. Examiner finds that applicant intends a broader scope because, page 41 at line 11 gives another definition in the form of an equation – it is not the ratio of the two areas; it is not the ratio of the two areas as defined on page 16. Examiner understands that the page 41 equation yields a useful estimation, but it is clear that this is not a determination of the an actual area fraction at a specific location. Since approximations read on the claim, it is deemed that any value/fraction can be an approximation – no matter how well/poorly it approximates it. Fajardo’s “air filling fraction” is a fraction. One could say it reads on

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applicant's "area fraction", because it is merely an estimation there of. It does not matter how well or horribly it estimates it. It could even have an error of 5000% and horrible correlation. Since applicant uses an estimation of the fraction, one could use Fajardo's fraction as an estimation.

From MPEP 2144.01 Implicit Disclosure:

"[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

See also, *In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir 1985).

Likewise for feedback control: one would immediately envision "feedback control" by immediate inference from Fajardo's discussion of control. If one wants a certain property, in a process, it is necessary to determine whether the process creates the property, and if not, make adjustments so as to obtain the property. This is feedback control. Turpin is citing to show it is known to control pressure during fiber drawing.

Claim 14: See the prior Office action for the broadest reasonable interpretation for "single piece" and "boring". Applicant does not dispute that those interpretation were unreasonable. Thus it is presumed that applicant agrees that claim 14 need not be construed more narrowly.



Claim 25 is clearly met. See page 7, lines 27-28 of Fajardo which teaches complete closure.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fajardo WO 00/16141 alone or in view of Turpin 5167684 as applied to claim 11 above, and further in view of Bogdahn 6098428 and Harding 4793840.

Fajardo does not disclose the claimed calculating step of the area fraction.

Bogdahn teaches a method of drawing hollow fibers (col. 1, lines 24-26) with very high dimensional accuracy (col. 2, lines 64-67). Col. 5, lines 31-47, and all of Bogdahn teaches to create a realistic model of the system. As per col. 5, lines 1-5, Bogdahn teaches calculating the controlled variable. It would have been obvious to use the Bogdahn method for control any of the Fajardo controlled variables – such as the air fill fraction.

Independent claim 11 requires “obtaining an area fraction”. Claim 12 further limits this step – it requires calculating the area fraction. However it is clear that this is not a determination of the an actual area fraction at a specific location. As evidence by Bogdahn (col. 1, lines 33-54), there is an inherent “dead time” problem in even the simplest case of fiber drawing.

As top the specific values/measurements: Bogdahn and Fajardo do not measure preform speed. However, Harding teaches to measure the speed, due to variations in the preform diameter: col. 1, lines 19-21 and 32-48. It would have been obvious to also monitor and control the preform speed in accordance with the Harding teachings, so as

compensate for preform variations. Also, one would be further motivated to measure control this as well as every other process parameter so as to maintain a robust process and to aid in troubleshooting whenever problems arise. The parameters relating to the fiber draw speed, fiber diameter, preform diameter and the area fraction of preform are easily seen in Fajardo and Bogdahn.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fajardo WO 00/16141 alone or in view of Turpin 5167684 as applied to claim 11 above, and further in view of Bogdahn 6098428 and Tateishi 5961681

See the above treatment of Fajardo and Bogdahn. The combination of Fajardo and Bogdahn clearly results in the use of the measurements for all the variables except for the tension. Tateishi shows that toward the end of the drawing process, the tension decreases (figure 3) and the loss increases (figure 5) – and that by monitoring and controlling the tension, one can mitigate the loss increase. See, for example, Tateishi col. 1, lines 54-67 and claim 1. It would have been obvious to also control/monitor the Fajardo tension, so as to avoid the end effects of the drawing process as taught by Tateishi.

As to the calculating being “from the measured values”: Examiner does not interpret this limitation as requiring the use of each value in the calculation. In as much as a limitation which refers to “uses the components of a computer” would not require that all items be used – for example a sound card, the broadest reasonable interpretation of claim 13 reads on using fewer than all the values. Also, all of the

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values are intertwined with all the results. For example, if the temperature is increased, then the diameter would probably decrease and the tension would decrease.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fajardo WO 00/16141 in view of Turpin 5167684 as applied to claim 11 above, and further in view of Bennett "Toward practical holey fiber technology: fabrication , splicing , modeling and characterization" and Anthon 6411762.

Claim 14 encompasses taking a glass rod, and drilling all of the necessary holes in it. Fajardo creates the holes via the stack and draw method. Bennett (last sentence of first paragraph) discloses that there are difficulties in fabricating holey fibers. Turpin teaches that one can make optical fibers with holes, by machineing the desired geometry with standard machining processes (col. 2, lines 44-49). Anthon (at col 13, lines 1-25) is cited as showing it is known to use ultrasonic drills to create holes in glass preforms that surround the core portion.

As indicated by the Supreme Court in KSR vs. Teleflex:

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under §103.

As indicated by Bennett, there are difficulties in creating holey fibers. Examiner finds this to be a design need or market pressure to solve a problem. There is a finite number of solutions to the problem of making a glass fiber with plural holes running the

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length. It would have been of ordinary skill and common sense to make holey fibers by machining a starting block, and then drawing it down as disclosed in Turpin. It would have been obvious to try to make the Fajardo fibers by drilling a block in the desired pattern.

As to the cleaning step: if there is foreign material there, one would know to remove it. It is not invention/innovation to clean something.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fajardo WO 00/16141 in view of Turpin 5167684, Bennett "Toward practical holey fiber technology: fabrication, splicing, modeling and characterization" and Anthon 6411762 as applied to claim 14 above, and further in view of Onishi 6474108.

Onishi (figure 11c) discloses that one can drill holes in the manner claimed and that such creates a uniform hole (col. 7, lines 22-34) with precision. It would have been obvious to use the Onishi hole-creation method to create the Onishi holes for the precision that the Onishi process creates. See prior Office action also.

### ***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Whereas applicant points out that infringement of a particular product or process is not an issue for the examiner, this is not very relevant because the rejection is not based on a particular process. The arguments from examiner are based on

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hypothetical processes. The entire patent system is based on the principle of giving inventors the right to prevent others from infringing. The question of clarity is substantially only important to those who might infringe. See, Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375, 60 USPQ2d 1272, 1276 (Fed. Cir. 2001) (citation omitted) (patent claims must be "sufficiently precise to permit a potential competitor to determine whether or not he is infringing").

### ***Conclusion***

Although there is no prior art rejection for claims 16-21, such is not to be interpreted as an indication that claims 16-21 contain any patentable subject matter. See the above non-prior art rejections.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

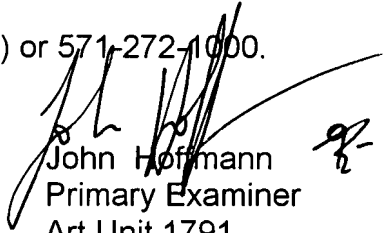
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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
John Hoffmann  
Primary Examiner  
Art Unit 1791

10-9-07

jmh

# INFORMATION DISCLOSURE CITATION IN AN APPLICATION

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**Takemi HASEGAWA, et al.**

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**1731**

## U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	CITE NO.	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US			
		US			
		US			
		US			

## FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	CITE NO.	Foreign Patent Document Country Codes-Number + -Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Figures Appear	Translation Yes No	
/JH/		JP 9318833	12-12-1997	FURUKAWA ELECTRIC CO LTD		JAPAN (w/English abstract)	

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER'S INITIALS	CITE NO.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
/JH/		Japanese Office Action Issued in corresponding Japanese Patent Application No. JP 2002-7014594, dated May 28, 2007	

EXAMINER

/John Hoffmann/

DATE CONSIDERED

/JH/ 10/09/2007

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.